

The Mini Z Resident (Mini ReZ): Psychometric Assessment of a Brief Burnout Reduction Measure



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INTRODUCTION

The Mini Z is a psychometrically sound measure of worklife and wellness in practicing clinicians.¹ Measures in residents address slightly different issues and are moderately longer, potentially limiting response rates.² We adapted the Mini Z for use in residents (the Mini ReZ), using the Mini Z core 10 questions and 5 additional questions reflecting domains identified by Trockel.³ Validating the new variation on the Mini Z would provide program directors the means to assess well-being within their programs (in collaboration with their residents), and determine actionable steps for improvement. The objective of this report is to demonstrate the validation of the Mini ReZ.

METHODS

The American Medical Association (AMA) enrolled multiple US residencies in a worklife and wellness measurement program using a measure based on the Mini Z. The measure (Fig. 1) was distributed via a data platform through the AMA and Forward Health Group (Madison, WI) with data collected within the data lab. The core questions #1–10 (adapted in part from the Physician Worklife Survey)⁴ included satisfaction, stress, burnout, work control, chaos (work atmosphere), teamwork, values alignment, and electronic health record (EHR) challenges. A single-item 5-choice burnout measure, validated against emotional exhaustion in the Maslach Burnout Inventory, was scaled with the lower 3 choices representing “burnout.” Five additional questions (#11–15) reflected domains from Trockel’s work

(interruptions, sleep impairment, support staff relationships, peer support, and program recognition). An inter-correlation matrix using Spearman’s method focused on relationships with burnout and a job satisfaction question from the Physician Worklife Survey.⁴ Correlations 0.35–0.69 represented modest to moderate correlations.⁵ An initial (derivation) set of correlations was performed for a 2019–2020 sample in 1792 US residents in 13 programs, with confirmatory correlations performed in 1097 residents in 12 programs (validation sample) surveyed in 2020–2021. Linear regressions adjusting for gender and program year assessed potential contributors to burnout.

RESULTS

In the derivation sample, 43% of programs were in the Northeast, 25% Southeast, and 25% Midwest; 25% of respondents were PGY1’s, 22% PGY2’s, 30% PGY3’s, 13% PGY4’s, 5% PGY5’s, and 17% were fellows. Fifty-one percent were female and 46% were male. Thirty-five percent were persons of color. The largest number of residents was in internal medicine (16%); other programs with high representation included surgery (12%) and obstetrics and gynecology (6%). Correlation data are shown in Tables 1 and 2. Program satisfaction was most strongly associated with values alignment (r 0.67), teamwork (0.55), department recognition (0.50), work control (0.49), peer support (0.43), and positive staff relationships (0.42, all p ’s < 0.0001). The burnout item provided good validation for the contributions of 4 of the 5 new single-item domains, including sleep impairment (r 0.54), program recognition (0.46), interruptions (0.43), and positive staff relationships (0.36, p ’s < 0.0001). The only new item not reaching a 0.35 correlation was peer support (r 0.29). As in prior studies, burnout correlated significantly and meaningfully with work conditions, including values alignment, teamwork, work control, chaos, and time pressure (r ’s 0.46–0.58). The validation sample showed comparable findings, with burnout related to most work conditions (values, teamwork, control, and chaos), and burnout and satisfaction both related to sleep impairment, department recognition, support staff relationships, peer support, and interruptions. Regressions

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Mini ReZ survey (for residents and fellows)

For questions 1-10, please indicate based on your experience for the majority of days over the past month.

1. I have been satisfied with my residency/fellowship program: [Scoring: Responses 4-5 = satisfied]

1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Agree Strongly

2. Using your own definition of “burnout”, please choose one of the numbers below: [Scoring: responses 1-3 = burnout]

5=I enjoy my work. I have no symptoms of burnout.
 4=I am under stress, and don't always have as much energy as I did, but I don't feel burned out.
 3=I am definitely burning out and have more than one symptom of burnout, e.g. emotional exhaustion
 2=My symptoms of burnout won't go away. I think about work frustrations a lot.
 1=I feel completely burned out. I am at the point where I may need to seek help.

3. My professional values are well aligned with those of my program leaders: [Scoring: Responses 4-5 = high values alignment]

1=Strongly disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Agree Strongly

4. The efficiency of my team has been: [Scoring: Responses 3-5 = good teamwork]

1=Poor 2=Marginal 3=Satisfactory 4=Good 5=Optimal

5. My control over my workload has been: [Scoring: Responses 3-5 = satisfactory control]

1 = Poor 2 = Marginal 3 = Satisfactory 4 = Good 5 = Optimal

6. I have felt a great deal of stress because of my job: [Scoring: Responses 1-2 = high stress]

1=Agree strongly 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree

7. The amount of time I have spent on the electronic health record (EHR) after hours is: [Scoring: Responses 1-2 = too much EMR work at home]

1=Excessive 2=Moderately high 3=Satisfactory 4=Modest 5=Minimal/none

8. The amount of time I spend on documentation is: [Scoring: Responses 3-5 = satisfactory time for documentation]

1=Excessive 2=Moderately high 3=Satisfactory 4=Modest 5=Minimal/none

Fig. 1 Mini ReZ with scoring. Items #1–10 adapted from Physician Worklife Survey (reference 4) and from MEMO study (Linzer M, Manwell LB, Williams ES et al. Working conditions in primary care: *Ann Intern Med.* 2009;151:28-36); questions #11–15 adapted from Trockel et al., reference 3. The Mini Z was developed by Dr. Mark Linzer and team at Hennepin Healthcare, Minneapolis, MN. Mini Z survey tools can be used for research, program evaluation, and education without restriction. Permission for commercial or revenue-generating applications of the Mini Z must be obtained from Mark Linzer or Hennepin Healthcare Institute for Professional Worklife prior to use: www.professionalworklife.com.

confirmed strong contributions of dissatisfaction, stress, sleep impairment, and lack of recognition to burnout (R squared = 60% of burnout variance explained).

DISCUSSION

Understanding resident worklife and wellness is currently of profound importance. High burnout and low job satisfaction are associated with depression, absenteeism, changing programs, or adverse personal outcomes.⁶ A brief mea-

sure, completed in a few minutes, could be valuable for programs wishing to sample their residents' current state and build wellness-enhancing change together. These findings offer new insights into sources of job satisfaction for residents, including values alignment, teamwork, and recognition by their program, as well as validation of the importance of Mini Z work condition domains and 5 new items derived from well-tested surveys. Limitations include not having tested this against prior longer measures, a convenience sample of programs, and lack of information on the measure's clinical utility. Use of the Mini ReZ to

Table 2 Intercorrelation Matrices. Mini ReZ National Resident Responses, 2020–2021 (Validation Sample)

Spearman Correlation Coefficients, N = 1097															
Prob > r under H0: Rho=0															
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
Q1: Program Satisfaction	1.00														
Q2: Less Symptoms of Burnout	0.58	1.00													
Q3: Values Aligned with Leaders	0.73	0.54	1.00												
Q4: Good Care Team Efficiency	0.60	0.50	0.60	1.00											
Q5: Good Workload Control	0.58	0.61	0.57	0.64	1.00										
Q6: Less Job Stress	0.54	0.67	0.51	0.47	0.61	1.00									
Q7: Less EHR Time Outside of Work	0.21	0.34	0.25	0.24	0.39	0.38	1.00								
Q8: Good Documentation Time	0.39	0.44	0.41	0.42	0.54	0.47	0.60	1.00							
Q9: Positive Work Atmosphere	0.40	0.51	0.39	0.38	0.50	0.49	0.30	0.41	1.00						
Q10: Manageable EHR Stress	0.21	0.30	0.25	0.29	0.31	0.34	0.41	0.46	0.26	1.00					
Q11: Work interruptions	0.35	0.48	0.35	0.33	0.45	0.48	0.36	0.43	0.43	0.37	1.00				
Q12: Lack of sleep	0.37	0.57	0.36	0.36	0.51	0.55	0.34	0.47	0.46	0.34	0.57	1.00			
Q13: Positive relationships with clinical support staff	0.53	0.47	0.50	0.48	0.43	0.40	0.16	0.29	0.31	0.23	0.33	0.31	1.00		
Q14: Support by peers	0.43	0.36	0.41	0.42	0.35	0.33	0.11	0.23	0.27	0.16	0.23	0.23	0.53	1.00	
Q15: Recognition by my department	0.58	0.58	0.58	0.53	0.56	0.50	0.24	0.40	0.40	0.28	0.40	0.44	0.57	0.47	1.00

Correlations greater than or equal to 0.35 and less than 0.50 are highlighted in orange; correlations greater than or equal to 0.50 are highlighted in red. All correlations had p values < 0.0001. EHR electronic health record

monitor resident worklife can be explored as a way to assess responses to residency, tailoring interventions to the findings.

M. Linzer, MD¹
P. Shah, BS²
N. Nankivil, BS²
K. Cappelucci, BS²
S. Poplau, BA¹
C. Sinsky, MD²

¹Hennepin Healthcare,
Minneapolis, MN, USA

²American Medical Association,
Chicago, IL, USA

Corresponding Author: M. Linzer, MD; Hennepin Healthcare, Minneapolis, MN, USA (e-mail: Mark.linzer@hcmcd.org).

Declarations:

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